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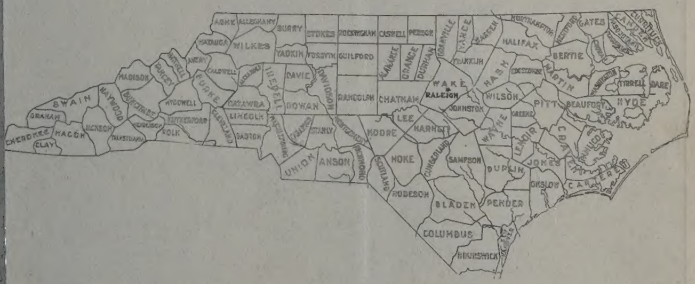
Farmers' Limestone, Shell and Marl Grinding Plants



The Extension Service Serves the State

Raleigh and West Raleigh, North Carolina

FARMERS' LIMESTONE, SHELL, AND MARL GRINDING PLANTS

By C. C. LOGAN, Extension Agronomist.

A good many farms in North Carolina, located quite a distance from ny railroad shipping point or wharf, need limestone. If good limestone, hells, or marl should exist in such localities, it might be advisable, in ome cases, to grind the material locally. By doing this, the expense of ailroad transportation and hauling to the farm would be obviated. The easibility of engaging in such an undertaking, commercially, however, ould depend upon the quality of the material, its accessibility, and dvance orders from neighbors.

The cost of producing ground limestone will depend considerably upon he available supply, the location of the material, and the cost of labor. Where shells are brought in by boat, to be ground, the selling price of the naterial depends on the cost of the shells delivered at the plant. Where arge quantities of high-grade marl exist in deposits 10 feet or more in hickness, free from pockets of soil, and not covered with more than 3 or feet of earth, the cost of quarrying and grinding should be somewhat ess than in the case with limestone. Water-soaked marl must be dried efore it can be ground, and this will increase the cost of production.

Before buying machinery and engaging commercially in the business f grinding such materials, a number of composite samples should be aken and analyzed to determine their purity. In drawing the samples, are should be exercised to get a large number of small pieces of material rom twenty or more different places throughout the deposit or supply. imestone should be sampled, if possible, from all of the different stratas, ince it frequently happens that different stratas differ in content of cal- ium carbonate. Under these conditions, some of the limestone is quite aluable, while other low-grade product is practically worthless. If amples of the limestone or marl are taken for analyses, the exact loca- ion and a general idea of the quantity of the material easily available hould be indicated, and if shells are collected the source of supply of the ame should be given. A pint of material is sufficient for the test.

GRINDING MACHINES.

Grinding machines suitable for marl, shells, or rock will vary in cost rom $400 to several thousand dollars, and in capacity, from one ton of round material per hour up to several tons per hour. A complete porta- le crusher that will grind from two to four tons of these materials per our, reducing them to the required fineness for use on soils, will cost round $1,200. Such a machine will take in pieces of marl or rock 12 nches in width and 6 inches in thickness and will require an 18- or 20-

horse-power steam engine or a 30-horse-power gasoline engine to drive it.

Smaller crushers, costing from $450 to $600, will grind about one ton per hour, and may be run with a 20- to 25-horse-power gasoline engine, but in order to get the rock into such mills it must be broken into smaller pieces, thus increasing the labor and cost of grinding per ton. These machines will grind shells and marl, if dry, somewhat more rapidly than they will grind limestone, and may also require less power while doing so.

A good many of these smaller machines are now in operation in Tennessee, Kentucky, Indiana, Illinois, and California, and seem to be filling a decided need in making it possible to treat soils with limestone where such treatment is needed. Otherwise, the treatment would be more expensive and frequently impractical. These plants furnish employment for men who might otherwise be idle during a portion of the year, and in most instances they are operated by means of a threshing or mill engine which is not in use throughout the whole season.

Two brothers, in a remote section of another State, purchased a small mill a few months ago, paying $500 for the same, and at odd times during the following fourteen months ground and sold 585 tons of limestone to their neighbors at a price of $1.35 per ton. Three men were required to run the mill, and the capacity was about one ton per hour.

It is reported that Mr. Tom Jennette, Lake Landing, Hyde County, North Carolina, purchased a pulverizer some time ago, paying $1,700 for the outfit, and sold enough ground shells in one year to pay for the entire plant.

The following companies manufacture grinding machines:

Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Gardner Crusher Company, Cleveland, Ohio.
Jeffrey-Mann Company, Columbus, Ohio.
Pennsylvania Crusher Company, Pittsburgh, Pa.
Power and Mining Machinery Company, Cudahy, Wis.
Universal Crusher Company, Cedar Rapids, Ohio.
Wheeling Mold and Foundry, Wheeling, Ohio.
Williams Patent Crusher and Pulverizer Company, St. Louis, Mo.
Midland Crusher and Pulverizer Company, Old Colony Building, Chicago, Ill.
The Kent Mill Company, Brooklyn, N. Y.
Brantley Pulverizer Company, Boston, Mass.
Sturtevant Mill Company, Boston, Mass.

Some of these companies make portable machines, and some make only the larger stationary mills.

In giving this incomplete list, there is no intention of recommending any particular machine.